DIRECT TESTIMONY
OF
GREG ROCKROHR

ENERGY ENGINEERING PROGRAM
SAFETY AND RELIABILITY DIVISION
ILLINOIS COMMERCE COMMISSION

Ameren Transmission Company of Illinois
Docket No. 12-0598 (Rehearing)

Petition for a Certificate of Public Convenience and Necessity, pursuant to Section 8-406.1 of the Illinois Public Utilities Act, and an Order pursuant to Section 8-503 of the Public Utilities Act, to Construct, Operate and Maintain a New High Voltage Electric Service Line and Related Facilities in the Counties of Adams, Brown, Cass, Champaign, Christian, Clark, Coles, Edgar, Fulton, Macon, Montgomery, Morgan, Moultrie, Pike, Sangamon, Schuyler, Scott and Shelby, Illinois.

November 13, 2013

Introduction

Q. **Please state your name and business address.**

A. My name is Greg Rockrohr. My business address is 527 East Capitol Avenue, Springfield, Illinois 62701.

Q. Are you the same Greg Rockrohr who previously provided direct testimony in this docket?

A. Yes. My prepared direct testimony, Staff Ex. 1.0, was initially filed on March 29, 2013, with an errata and revision filed on April 10, 2013. I testified at the evidentiary hearing on May 13, 2013.

Q. What is the purpose of your direct testimony in this rehearing?

A. My direct testimony:

1. Offers my recommendation regarding an alternative route proposal from Mr. Andrew Robinette and Ms. Stacy Robinette ("Robinettes");
2. Explains the rationale and procedure Staff used when identifying an alternative transmission line route between Pawnee and Mt. Zion (via Kincaid), as directed by the October 2, 2013, Notice of Administrative Law Judges' Ruling.
3. Explains how Staff's alternative route between Pawnee and Mt. Zion ties to the route alternatives for the Mt. Zion to Kansas segment of the Illinois Rivers Project.
4. Reiterates my opinion that the Commission is not obligated under Section 8-406.1 of the Public Utilities Act to grant a certificate to ATXI in this proceeding for every segment of the Illinois Rivers Project.

Robinettes' Alternative Route Proposal

Q. What is your recommendation regarding the Robinettes' alternative route?

A. If, following rehearing, the Commission determines that ATXI's Alternative Route between Meredosia and Pawnee should be used, then I recommend that the Commission also determine that the Robinettes' alternative route, which modifies a portion of ATXI's Alternate Route, also should be used.

Q. What is the Robinettes' alternative route proposal?

A. The Robinettes' alternative route, filed on February 13, 2013, would modify a portion of ATXI's alternate route between Meredosia and Pawnee, in Section 21 of Centerville Precinct Township, in Morgan County.[1] The relevant portion of ATXI's Alternate Route is depicted on ATXI Ex. 4.2, Part 39, Page 2. ATXI's Alternate Route, without Robinettes' modification, runs south along Delong Rd. between Pitchford Rd. and Nortonville Rd. At Nortonville Rd., ATXI's Alternate Route turns east. The Robinettes' alternative route would eliminate the spans of the transmission line along Delong Rd. that are south of Pitchford Rd., and instead turn the transmission line to the southeast at the corner of Delong Rd. and Pitchford Rd. until the line reaches Nortonville Rd. At Nortonville Rd. the Robinettes' alternative route would turn east and rejoin ATXI's Alternate Route.

Q. Have you attempted to use the criteria that the Commission identified in its August 20, 2013, Final Order to compare the Robinettes' alternative route to ATXI's Alternate Route?

[1] Attachment A to Robinettes' February 13, 2013, alternative route proposal; and ATXI Ex. 13.5 (Rev.).

A. Yes, It is my understanding that, in its Final Order, the Commission utilized the following eleven criteria to evaluate each route alternative presented:

a. Length of Line

b. Difficulty and Cost of Construction

c. Difficulty and Cost of Operation and Maintenance

d. Environmental Impacts

e. Impacts on Historical Resources

f. Social and Land Use Impacts

g. Number of Affected Landowners and other Stakeholders and Proximity to Homes and other Structures

h. Proximity to Existing and Planned Development

i. Community Acceptance

j. Visual Impact

k. Presence of Existing Corridors

Q. What do you conclude regarding (a): Length of Line?

A. Robinettes' alternative route is about 0.4 miles shorter than ATXI's Alternate Route.

Q. What do you conclude regarding (b): Difficulty and Cost of Construction?

A. There would be no appreciable difference in difficulty or cost of construction. Based upon ATXI's anticipated span lengths, the Robinettes' alternative route would likely require three fewer structures.[2] But the difficulty and cost savings due to fewer structures for the Robinettes' alternative route would likely be offset

[2] ATXI Ex. 7.0, 3.

by the added cost of one additional dead-end structure and somewhat more difficult/costly access to the structure locations.

Q. What do you conclude regarding (c): Difficulty and Cost of Operation and Maintenance?

A. There would be no appreciable difference in the difficulty and cost of operations and maintenance. Periodic tree trimming would be necessary along both routes. It appears that fewer trees would need to be trimmed/removed along the shorter Robinettes' alternative route, and fewer facilities would need to be maintained, but again, these savings would likely be offset by somewhat more difficult/costly access.

Q. What do you conclude regarding (d): Environmental Impacts and (e) Impacts on Historical Resources?

A. I am unaware of significant impacts regarding either criterion for either route.

Q. What do you conclude regarding (f): Social and Land Use Impacts?

A. Other than residences, the land use in this area appears to be agricultural. I note that Delong Rd. is very narrow, so that if ATXI's Alternate Route is used without the Robinettes' alternative, many of ATXI's support structures along Delong Rd. will likely be located in areas that are now cultivated. Though the Robinettes' alternative route passes diagonally across cultivated land, it appears to me that, with careful support structure placement, few, if any, of ATXI's support structures would need to be placed in cultivated areas. Conductors would pass over the top of cultivated areas, but it appears to me that the support structures and their

foundations could be placed to avoid areas where farming equipment regularly travels.

Q. What do you conclude regarding (g): Number of Affected Landowners and other Stakeholders and Proximity to Homes and other Structures?

A. The primary benefit of the Robinettes' alternative route is that it would move the 345 kV transmission line substantially farther away from two residences located along Delong Rd. In particular, ATXI's Alternate Route appears to pass very near the residence at 248 Delong Rd., which is located on the east side of Delong Rd., south of Pitchford Rd.

Q. What do you conclude regarding (h): Proximity to Existing and Planned Development?

A. As stated above, the use of Robinettes' alternative route would move the 345 kV transmission line farther away from two existing residences on Delong Rd. I am unaware of any additional existing or planned development along either route.

Q. What do you conclude regarding (i): Community Acceptance and (j): Visual Impact.

A. The Robinettes' alternative route would move the line farther from a narrow county road (Delong Rd.) to a less visible location, while also moving it farther from a somewhat-wider Nortonville Rd. Since the Robinettes' alternative route would result in less visual impact, it is likely that the Robinettes' alternative route would have greater community acceptance.

Q. What do you conclude regarding (k): Presence of Existing Corridors?

A. The only existing corridor of which I am aware is the county road rights-of-way associated with ATXI's Alternate Route. However, due to the existence of residences along the narrow Delong Rd. right-of-way, I do not view this county road corridor as providing ATXI's Alternate Route an advantage.

Q. What is your recommendation regarding the Robinettes' alternative route?

A. As expressed in Staff's prior testimony and briefs, Staff is not convinced that ATXI's Alternate Route, with or without the Robinettes' recommended modification, is the least cost route between Meredosia and Pawnee.[3] However, if, in its Final Order in this rehearing, the Commission approves use of the ATXI Alternate Route between Meredosia and Pawnee, the Commission should also adopt the relatively minor modification to ATXI's Alternate Route that the Robinettes propose.

Staff's identified route between Pawnee and Mt. Zion via Kincaid

Q. Why did Staff identify and file a route alternative as part of this rehearing?

A. On October 2, 2013, the ALJs issued a notice that included, in relevant part, the following directive: "Notice is also given, consistent with the Commission's direction from the Bench on October 2, 2013, that Commission Staff shall identify a transmission line route between Pawnee and Mt. Zion (via Kincaid) as soon as possible." In response to the Commission's and the ALJs' directive, I identified a route between Pawnee and Mt. Zion. Staff provided notice and filed the route on October 16, 2013 on the Commission's e-Docket system.

Q. What process did you use to identify the alternative route?

[3] Staff Ex. 1.0, 34-37; Staff BOE, 5-10.

A. Initially, I examined aerial maps available from public internet mapping sites, primarily Google Maps and Bing Maps, to identify a path between Kincaid and the Mt. Zion area.[4] I also viewed the route that I ultimately selected, as best I could, from an automobile. I obtained parcel identification numbers and names for landowners along the route from the Supervisor of Assessments offices in Christian and Macon Counties.

Q. Is it possible that parties to this proceeding will provide information to demonstrate that Staff's alternative route is not ideal or not viable?

A. Yes. I believe that Staff's alternative route is viable. However, given the time available to me, I was unable to hold any meetings with parties or landowners to discuss the route, so it is certainly possible that ATXI or interveners will present information that was previously unavailable to me. I do not represent that the route that I identified is the only potential alternative route between Kincaid and the Mt. Zion area.

Q. Why is using an alternative route from Pawnee to Mt. Zion through Kincaid a good route choice for ATXI's project?

A. It is my opinion that an alternative route from Pawnee to Mt. Zion through Kincaid would be significantly shorter, reduce the project's cost, and impact less land. AIC operates an existing 345 kV transmission line that extends from Kincaid to supply AIC's existing Pawnee Substation, where the existing 345 kV line ends. ATXI Ex. 4.2, Part 51, page 2, shows that ATXI plans to connect its Illinois Rivers Project to AIC's existing Kincaid-Pawnee 345 kV line at a new substation south of

[4] https://maps.google.com; http://www.bing.com/maps

Pawnee, about a mile southeast of this existing 345 kV line's terminus. By using 5.2 miles of the existing 345 kV line from ATXI's proposed Pawnee substation site to Kincaid to move electricity from west to the east, and by extending a 345 kV transmission line from Kincaid to the Decatur area, rather than constructing the 345 kV line from Pawnee to Pana to the Decatur area, as ATXI proposes, it appears to me that about 25 miles of new 345 kV transmission line can be eliminated from the project.[5] As a result of eliminating the 25 miles in question, construction costs, and maintenance costs will be lower, many land acquisitions will be avoided, and there will be less impacts on landowners. Even if parties point out that the specific Kincaid to Mt. Zion route that I identified is not ideal, the concept of constructing ATXI's new 345 kV transmission line from Kincaid to supply the Decatur area, instead of from Pana, is still the most rational, cost-effective solution.

Q. Did your identification of a route between Pawnee and Mt. Zion via Kincaid require you to identify potential location(s) for ATXI's 345/138 kV substation site?

A. Yes, I believe it did. Though not an attorney, I understand that the Commission's Final Order, on page 86, determined that a 345/138 kV substation to supply the Decatur area is necessary, but where that substation is to be constructed is uncertain.[6] Staff's alternative route filing identifies two potential 345/138 kV

[5] The Pawnee-Pana segment would require approximately 32.3 miles of new 345 kV transmission line, and the Pana-Mt. Zion segment approximately 33.8 miles: a total length of 66.1 miles of new 345 kV transmission line. The alternative route that Staff submitted between Pawnee and Mt. Zion (via Kincaid) would require approximately 41 miles of new 345 kV transmission line.

[6] American Transmission Company of Illinois, ICC Order Docket No. 12-0598, 86 (Aug. 20, 2013)

substation sites, including the substation site south of Mt. Zion that the Village of Mt. Zion suggested with its alternative route filing.[7] The second location Staff's alternative route filing identifies is near this site, southeast of the intersection of E. Andrews Street and Henry Rd., directly adjacent to both Staff's alternative route and ATXI's Primary Route for the Mt. Zion to Kansas segment of the project. Staff prefers either of these two substation locations over the location ATXI identified in its petition, which is further to the north, because, after the Decatur area, the next stop to the east for ATXI's proposed 345 kV transmission line is Kansas, which is approximately 13 miles south of ATXI's proposed substation site.

Q. Did you identify any other potential location(s) for ATXI's 345/138 kV substation?

A. Yes. On October 25, 2013, I identified an additional location in Macon County, north of W. Hilvety Rd. (CR 2100N) and east of Rosedale Rd. that appears to be a very good choice for ATXI's 345/138 kV substation. This is because AIC already has an existing 138 kV line extending in three directions from this location: to the north to the Decatur area; to the south to AIC's existing Pana Substation; and to the east to an existing substation located just north of Moweaqua, along CR 3000N.[8] It appears to me that a 345/138 kV substation at this location could meet ATXI's, AIC's, and MISO's operational needs while minimizing impacts to landowners. Specifically, it appears to me that:

[7] Village of Mt. Zion Alternative Route, December 31, 2012; Exhibit A to Staff's October 16, 2013, Identification of Alternative Route from Pawnee to Mt. Zion, page 15.
[8] This location can be seen on ATXI Ex. 4.2, Part 61, page 2, and on Exhibit A to Staff's October 16, 2013, Identification of Alternative Route from Pawnee to Mt. Zion, page 11.

- AIC could use its existing 138 kV transmission facilities to supply the Decatur area from this new 345/138 kV substation, so that AIC would not need to, without delay, separately petition the Commission for a Certificate of Public Convenience and Necessity in order to construct 138 kV transmission lines and connections to supply the Decatur area, as I understand it would need to do if any of the other potential substation sites are used, including the site that ATXI proposes.
- Should AIC, ATXI, and/or MISO in the future determine that a second 138 kV line to the Decatur area is necessary, AIC could extend the existing 138 kV line that terminates at its existing substation north of Moweaqua, near Hwy 51.
- AIC's 138 kV transmission line that runs south from this location extends to AIC's existing substation at Pana, so that it appears that the same 345/138 kV substation could reinforce AIC's 138 kV system in the Pana area.
- AIC's 138 kV transmission line that runs south from this location to Pana does not appear to connect to any other substation, and parallels a portion of ATXI's Primary Route previously submitted for the Pana to Mt. Zion segment. Therefore, if at some future date AIC, ATXI, and/or MISO demonstrate that, despite the existing 345 kV tie between Pawnee and Pana through Kincaid, an additional 345 kV tie to Pana is necessary, this existing 138 kV line route can be rebuilt/converted to a 345 kV line, thereby minimizing impacts to all property owners located along the route.

Q. Did you indicate the potential substation site that you have just described on the alternative route documents that Staff filed on October 16, 2013?

A. No. As directed in the October 2, 2013, ALJ notice, Staff completed its alternative route filing as quickly as possible. At the time of Staff's alternative route filing, I had not identified the location north of W. Hilvety Rd. (CR 2100N) and east of Rosedale Rd. as a potential location for ATXI's 345/138 kV substation site. Attachment A to this direct testimony is a mark-up of page 11 of Exhibit A to Staff's alternative route showing this additional potential substation site. ATXI Ex. 4.2, Part 61, Page 2, shows this same location. To be clear, I believe that either of the locations shown on page 15 of Staff's alternative route filing would serve as good substation sites; however, both of those sites would require that AIC construct at least one 138 kV line on yet-to-be-acquired rights-of way from the substation site to AIC's existing 138 kV system in the Decatur, as would the site that ATXI proposed in its petition. Also, none of the other sites would provide an existing direct 138 kV path to Pana. For these reasons, I currently favor the potential substation site that I identified north of W. Hilvety Rd. (CR 2100N) and east of Rosedale Rd. Regardless of the substation siting, Staff's alternative transmission line route between Pawnee and Mt. Zion through Kincaid remains the same, and to my knowledge, all affected property owners were identified with Staff's filing.

Q. **In ATXI Ex. 11.0, Mr. Kramer testifies that if the Mt. Zion substation were located along a line between Pana and Kansas, the substation would**

provide inadequate voltage support under certain contingency conditions.[9] Would inadequate voltage exist if a 345/138 kV substation were located at any of the locations you identify in this testimony?

A. I do not believe so, with the caveat that I have not run power flow studies to model ATXI's and AIC's transmission systems under normal and contingency conditions. In ATXI Ex. 11.0, Mr. Kramer testified that the studies that indicated inadequate voltage under contingency conditions assumed a distance of 30 miles for the 138 kV lines. Based upon my estimate using aerial maps, the length of AIC's existing 138 kV line connecting Pana to the PPG plant substation, in Mt. Zion, is 34-35 miles. The distance from the potential substation site that I identified near W. Hilvety Rd. (CR 2100N) to the AIC PPG plant substation, following this existing 138 kV transmission line appears to be 17-18 miles. The distance following AIC's existing 138 kV transmission line south to AIC's existing Pana Substation is approximately 17 miles. I estimate that the length of a new 138 kV line constructed from either of the two potential substation sites, shown on page 15 of Exhibit A to Staff's alternative route filing, to the PPG substation would be approximately eight miles. These shorter distances associated with all three potential substation sites to supply the Decatur area that I identified should result in significantly less voltage drop on AIC's 138 kV system when compared to the location assumed in ATXI's study to which Mr. Kramer referred, which used a theoretical 30-mile long 138 kV line.

[9] ATXI Ex. 11.0, 7-8.

Q. Did you attempt to verify with ATXI whether the potential substation site that you identified near W. Hilvety Rd. (CR 2100N) would allow AIC to provide adequate voltage to the Decatur area?

A. Yes. I sought this information with Staff data requests ENG 11.01 to ENG 11.03, directed to ATXI. I understand ATXI's responses to indicate that, though it performed no studies, ATXI does not believe the potential substation site located north of W. Hilvety Rd. (County Rd. 2100N), between Rosedale Rd. and Nevada Rd., would provide adequate voltage support in the Decatur and Mt. Zion area.[10] ATXI also stated that my requests required specific study scenarios that were overly burdensome, and sought information outside the scope of this rehearing because this potential substation site is not in Mt. Zion.

Q. What is your reaction to ATXI's objections in response to your data requests ENG 11.02 and ENG 11.03?

A. I am surprised by it. Though I am not an attorney, I did not understand the Commission's Final Order to limit the location of ATXI's potential substation sites to be within Mt. Zion. Rather, I interpreted the order to indicate that a 345/138 kV substation should be located to adequately supply AIC's 138 kV system in the Decatur and Mt. Zion area. I also do not believe my requests to be burdensome, because once a transmission model exists it is common engineering practice to run multiple studies to model various configurations and scenarios, including changes in impedance for line sections due to changes in conductor size and/or

[10] ATXI response to Staff DR ENG 11.01 to ENG 11.03, included as Attachment B. ATXI's responses to Staff data requests ENG 11.02 and ENG 11.03 both indicate that Staff filed its alternative route between Pawnee and Mt. Zion on October 7, 2013. However, Staff filed its alternative route on October 16, 2013.

line length. Furthermore, if ATXI's study results were to demonstrate that a given potential substation site that I identified is not viable, I would have no reason to recommend use of that site. I hope that ATXI will provide and explain, either in supplemental responses to Staff's data requests or in rebuttal testimony, results from power flow analyses using each of the potential substation sites that I have discussed above. If any of the study results indicate that inadequate voltage would exist, ATXI should explain the system configuration/assumptions associated with the inadequate voltage.

Tie between Staff's alternative route and the Mt. Zion to Kansas Segment

Q. **How would Staff's alternative transmission line route from Pawnee to Mt. Zion via Kincaid tie to the various alternative routes for the segment to the east that are in the record: from Mt. Zion to Kansas?**

A. As shown on page 15 of Exhibit A to Staff's October 16, 2013, Identification of Alternative Route from Kincaid to Mt. Zion, the route that Staff identified meets up with ATXI's Primary Route for the Mt. Zion to Kansas segment directly south of the intersection of Henry Rd and E. Andrews Street. This fact does not mean that Staff recommends use of ATXI's Primary Route for the entire Mt. Zion to Kansas segment. ATXI's Alternate Route for the Mt. Zion to Kansas segment, and MCPO's Alternate Route MZK also both meet up with ATXI's Primary Route,[11] so in large part any of these route alternatives could be used in conjunction with Staff's alternative route, or a combination of route alternatives could be used.

[11] ATXI Ex. 13.7, 9-10.

Q. **What is your recommendation regarding the best route for the segment from Mt. Zion to Kansas if Staff's alternative route between Pawnee and Mt. Zion is used?**

A. I have not yet reached a conclusion regarding the Mt. Zion to Kansas segment. It initially appears that the lowest cost route for the Mt. Zion to Kansas segment would be realized by using, from west to east, (1) ATXI's Primary Route to Cushman Rd., south of Hall Rd.; (2) ATXI's Segment Option from Cushman Rd to Murphy Rd., south to the 1600N alignment, then east to ATXI's Alternate Route; and (3) ATXI's Alternate Route to the Kansas Substation.[12] I plan to provide my recommendation in rebuttal testimony, after I further review the various route alternatives and the direct testimonies of the other parties.

General Comments Regarding this Rehearing

Q. Is it your understanding that the Commission must issue a certificate for each segment of ATXI's Illinois Rivers Project as part of this proceeding?

A. No. My opinion in this regard has not changed. Section 8-406.1(f) of the Act states, in part:

> (f) The Commission shall, after notice and hearing, grant a certificate of public convenience and necessity filed in accordance with the requirements of this Section if, ***based upon the application filed with the Commission and the evidentiary record, it finds the Project*** will promote the public convenience and necessity and that all of the following criteria are satisfied:
>
> (1) That the Project is necessary to provide adequate, reliable, and efficient service to the public utility's customers and ***is the least-cost means of satisfying the service needs of the public utility's customers*** or that the Project will promote the development of an effectively competitive electricity market that operates efficiently, is equitable to all customers, and ***is the least cost means of satisfying those objectives***.

[12] ATXI's Segment Option, connecting ATXI's Primary Route and Alternate Route is shown on ATXI Ex. 4.2, Part 69, Page 2.

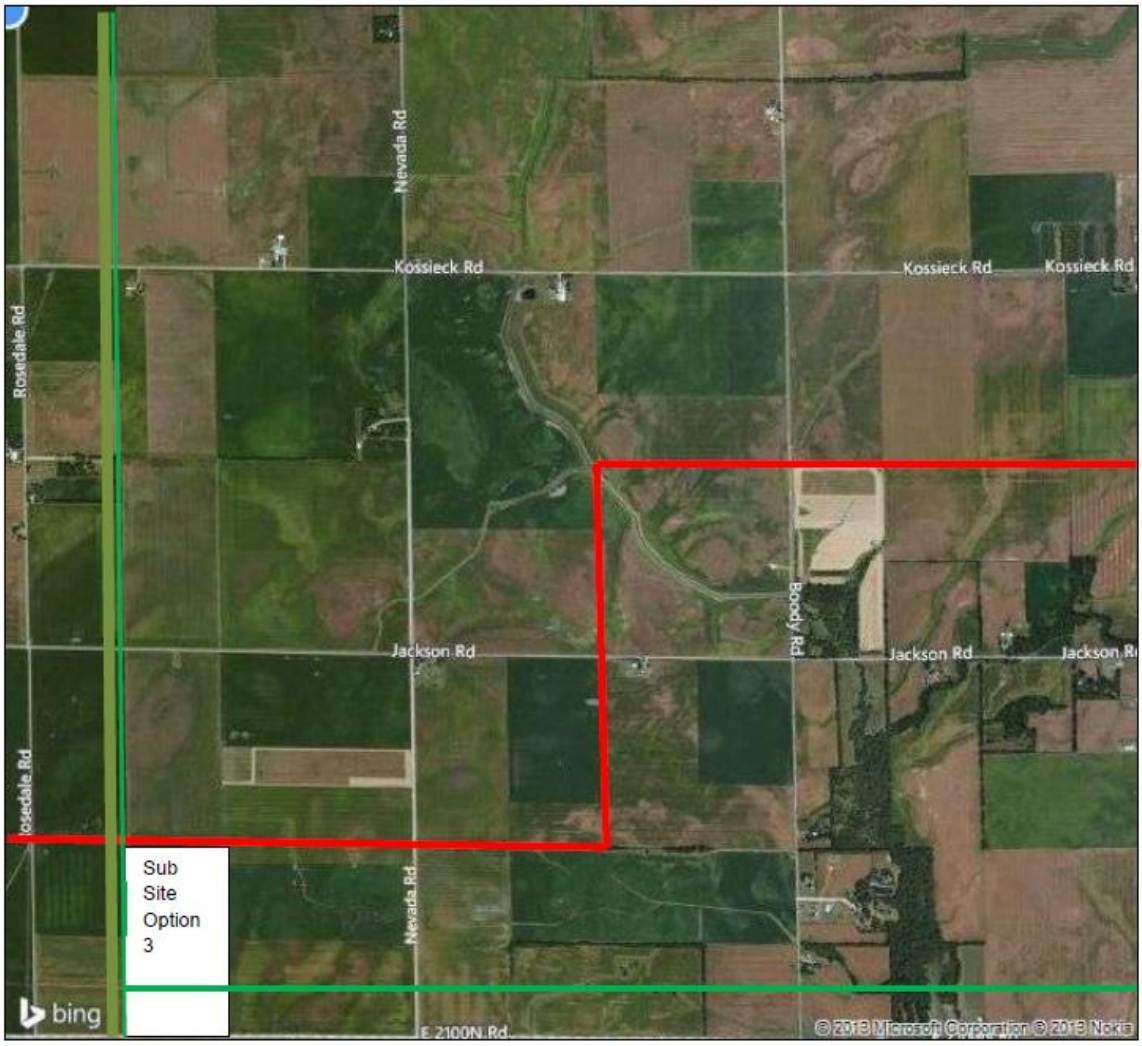
220 ILCS 5/8-406.1(f) (emphasis added). Though I am not an attorney, based upon the language above, if uncertainty regarding the least cost routing for some segments exists, it would seem appropriate, logical, and practical, for ATXI, or for ATXI and AIC jointly, to seek in a separate proceeding a CPCN for both the 345 kV and 138 kV transmission lines necessary for completion of the MISO Multi-Value Project #10 and #11.

Q. **Does this question conclude your prepared direct testimony for rehearing?**

A. Yes it does.

Docket No. 12-0598 (Rehearing)
ICC Staff Ex. 2.0
Attachment A

Page 11 from Staff's October 16, 2013, Exhibit A to Alternative Route filing, modified to show potential 345/138 kV substation site and AIC's existing 138 kV transmission lines.



(1 inch equals approximately 0.5 miles)

Alternative Route

Existing AIC 138 kV Transmission Line

ATXI Primary Route (Pana-Mt. Zion) previously presented

Ameren Transmission Company of Illinois's
Response to ICC Staff Data Requests
Docket No. 12-0598
Petition for a Certificate of Public Convenience and Necessity, pursuant to Section 8-406.1 of the Illinois Public Utilities Act, and an Order pursuant to Section 8-503 of the Public Utilities Act, to Construct, Operate and Maintain a New High Voltage Electric Service Line and Related Facilities in Various Counties in the State of Illinois.
Data Request on Rehearing Response Date: 11/4/2013

ENG 11.01

On page 11 of Exhibit A to Staff's Identification of an Alternative Route from Kincaid to Mt. Zion, filed on October 16, 2013, Staff indicates a route that crosses an existing 138 kV line just north of W. Hilvety Rd. (County Rd. 2100N) between Rosedale Rd. and Nevada Rd., in Macon County. Staff understands that Ameren Illinois Company ("AIC") owns and operates this 138 kV transmission line, and that from the location described above, this 138 kV line extends (1) south to Pana, (2) north to Decatur/Mt. Zion, and (3) east to an AIC-owned 138/34 kV substation located along County Rd. 3000N, west of Hwy 51, north of Moweaqua. Is Staff's understanding of the ownership and routing of this 138 kV line correct? If no, please identify the correct ownership and routing, if known.

RESPONSE

Prepared By: Dennis D. Kramer
Title: Sr. Director, Transmission Policy and Planning
Phone Number: 314 554 2238

Staff's understanding of the ownership and routing of the above described 138 kV line is correct. However the AIC-owned substation (which is named Moweaqua North) located along County Rd. 3000N, west of Hwy 51, north of Moweaqua is a 138/69 kV substation and not 138/34 kV.

Ameren Transmission Company of Illinois's
Response to ICC Staff Data Requests
Docket No. 12-0598
Petition for a Certificate of Public Convenience and Necessity, pursuant to Section 8-406.1 of the Illinois Public Utilities Act, and an Order pursuant to Section 8-503 of the Public Utilities Act, to Construct, Operate and Maintain a New High Voltage Electric Service Line and Related Facilities in Various Counties in the State of Illinois.
Data Request on Rehearing Response Date: 11/4/2013

ENG 11.02

If ATXI were to construct a 345 kV transmission line east from Kincaid along the route shown on page 11 of Exhibit A to Staff's Identification of an Alternative Route from Kincaid to Mt. Zion, would a connection between AIC's 138 kV lines that exist north of Hilvety Rd. and east of Rosedale Rd. to a new ATXI 345/138 kV substation constructed north of Hilvety Rd. and east of Rosedale Rd. provide an adequate additional 345 kV source for both the Decatur and Pana areas, so that additional 345/138 kV substations near Pana and Mt. Zion could be eliminated or deferred? If it would not, please state in detail why this is the case, and provide and explain specific study scenarios wherein unacceptable voltage and/or loading would exist with ATXI's 345/138 kV substation connected as described in this data request.

RESPONSE

Prepared By: Dennis D. Kramer
Title: Sr. Director, Transmission Policy and Planning
Phone Number: 314 554 2238

ATXI objects to this request as outside the scope of rehearing. The request proposes the construction of a new substation west of Moweaqua and so a system configuration that is not mentioned or described in Staff's proposed Kincaid-Mt. Zion route submittal. The Commission's Final Order declined to grant a Certificate for the Pawnee – Pana and Pana – Mt. Zion segments of the Illinois Rivers project because it found persuasive Staff's argument that ATXI and MISO failed to consider whether it would be preferable to have a line from Kincaid to Mt. Zion. (Order, p. 83-84.) However, the Commission found a substation in Mt. Zion necessary. (Order, p. 86.) ATXI sought rehearing to provide an opportunity for the Commission to consider additional evidence substantiating the operational and reliability benefits associated with a Pawnee-Pana-Mt. Zion route as compared to a Kincaid option. No party, however, sought rehearing on the conclusion that the Mt. Zion substation is necessary. The Commission granted ATXI's application for rehearing, and the ALJs directed that "consistent with the Commission's direction from the Bench on October 2, 2013, that Commission Staff shall identify a transmission line route between Pawnee and Mt. Zion (via Kincaid) as soon as possible. Staff filed a transmission line route between Pawnee and Mt. Zion (via Kincaid) and proposed Mt. Zion substation locations on October 7,

2013. By now suggesting a system configuration (i) that is something other than the Pawnee – Kincaid – Mt Zion option which ATXI sought and received rehearing to provide more information on, (ii) that is something different from the Staff Kincaid routing proposal ordered by the ALJs, and (iii) which suggests elimination of the Mt. Zion substation found necessary in the Final Order, the request goes beyond the scope of rehearing. Moreover, such a new substation could potentially impact landowners who have not received notice about this proceeding.
ATXI further objects to this request as requiring ATXI to conduct new studies that would be unduly burdensome to conduct. The request requires ATXI to develop "specific study scenarios" and perform extensive analysis to determine if this new hypothetical substation location and transmission line configuration would "provide an adequate additional 345 kV source for both the Decatur and Pana areas, so that additional 345/138 kV substations near Pana and Mt. Zion could be eliminated or deferred".

Subject to and not withstanding these objections ATXI provides the following initial observations and concerns with the hypothetical substation location and system configuration as described in this DR ENG 11.02. These statements are based upon ATXI's understanding of the very limited information provided in this DR and ATXI's knowledge of the Ameren transmission system. They are not a complete or exhaustive list of problems or concerns that may be identified upon further analysis and therefore does not represent a commitment or agreement by ATXI that the described transmission reinforcements would be the final result of detailed analysis.

1. The proposed substation would provide only a single 138 kV connection from the new substation to the Decatur area, while ATXI's proposed Mt. Zion substation location provides two shorter length 138 kV connections to the Decatur area. Therefore the Illinois River Project provides a stronger and more reliable supply to the Decatur area.

2. For certain potential outages of the Oreana substation 345/138 kV transformers, ATXI expects the post contingency voltages in the Decatur area would only be approximately 91-92% of nominal. This is below the acceptable voltage level of 95% as stated in my previous testimony and approaching the level that carries significant risk for voltage collapse. As I explained in my direct testimony," The voltage criteria used by Ameren Services for system planning has been developed to provide voltages to the customer consistent with the Standards of Service for Electric Utilities contained in 86 Ill. Adm. Code Part 410. Transmission system voltage below 95% of nominal has been established as an indication of a possible deficiency. Conditions which result in 86% - 89% voltages in the steady-state analysis carry significant risk for voltage collapse."

3. Ameren Services expects that equipment overloads on the Ameren transmission system, especially the 138 kV system, would occur if certain NERC Category C events occurred at the Kincaid substation which resulted in splitting the ring bus configuration. These overloads would need to be addressed with additional system reinforcements.

4. The hypothetical substation would not provide an additional 345 kV supply to the Pana substation and is therefore not adequate to address the need for an additional 345 kV supply and associated substation near Pana.

5. Ameren Services expects that additional future system development will probably continue in the Decatur area. Although not expected in the short term, a possible result would be the creation of a 345 kV circular electrical path around the Decatur and Mt. Zion area. Locating the new 345/138 kV substation as described in this DR would result in longer 345 kV lines to connect it to the circular electrical path. This will result in greater expense to develop the circular path. The development of the circular electrical path would probably be driven by the need to address system reliability issues, therefore the Ameren Illinois customers would be required to pay 100% of the cost of the longer 345 kV lines to connect to the new substation. One of the reasons why the Illinois Rivers Project located the new Mt. Zion substation farther northward than proposed by this DR is to reduce the length of these potential future 345 kV lines associated with a circular electrical path around the Decatur and Mt. Zion area.

Therefore ATXI does not believe the hypothetical substation location and system configuration would be an adequate substitute such that additional 345/138 kV substations near Pana and Mt. Zion could be eliminated or deferred.

Ameren Transmission Company of Illinois's
Response to ICC Staff Data Requests
Docket No. 12-0598
Petition for a Certificate of Public Convenience and Necessity, pursuant to Section 8-406.1 of the Illinois Public Utilities Act, and an Order pursuant to Section 8-503 of the Public Utilities Act, to Construct, Operate and Maintain a New High Voltage Electric Service Line and Related Facilities in Various Counties in the State of Illinois.
Data Request on Rehearing Response Date: 11/4/2013

ENG 11.03

If ATXI were to construct a new 345/138 kV substation north of Hilvety Rd. and east of Rosedale Rd., and AIC were to connect its existing 138 kV transmission line that runs between Pana and Decatur to that new 345/138 kV substation, as described in Staff data request ENG 11.02, could AIC and/or ATXI provide an additional 138 kV source to the Decatur area by extending its 138 kV line from AIC's existing substation, located on County Rd. 3000N west of Hwy 51? If not, please explain why not.

RESPONSE

Prepared By: Dennis D. Kramer
Title: Sr. Director, Transmission Policy and Planning
Phone Number: 314 554 2238

ATXI objects to this request as outside the scope of rehearing. The request proposes the construction of a new substation west of Moweaqua and a 138 kV transmission line route from AIC's existing substation (Moweaqua North substation) located on County Rd. 3000N west of Hwy 51 to the Decatur area, and so a system configuration and transmission line routing that is not mentioned or described in Staff's proposed Kincaid-Mt. Zion route submittal. The Commission's Final Order declined to grant a Certificate for the Pawnee – Pana and Pana – Mt. Zion segments of the Illinois Rivers project because it found persuasive Staff's argument that ATXI and MISO failed to consider whether it would be preferable to have a line from Kincaid to Mt. Zion. (Order, p. 83-84.) However, the Commission found a substation in Mt. Zion necessary. (Order, p. 86.) ATXI sought rehearing to provide an opportunity for the Commission to consider additional evidence substantiating the operational and reliability benefits associated with a Pawnee-Pana-Mt. Zion route as compared to a Kincaid option. No party, however, sought rehearing on the conclusion that the Mt. Zion substation is necessary. The Commission granted ATXI's application for rehearing, and the ALJs directed that "consistent with the Commission's direction from the Bench on October 2, 2013, that Commission Staff shall identify a transmission line route between Pawnee and Mt. Zion (via Kincaid) as soon as possible. Staff filed a transmission line route between Pawnee and Mt. Zion (via Kincaid) and proposed Mt. Zion substation locations on October 7, 2013. By now suggesting a system configuration (i) that is something other than the Pawnee – Kincaid – Mt Zion option which ATXI sought and received rehearing to provide more information on, (ii) that is something different from the

Staff Kincaid routing proposal ordered by the ALJs, and (iii) proposes new 138 kV lines not previously proposed in this proceeding, the request goes beyond the scope of rehearing. Moreover, such a new substation and new 138 kV lines could potentially impact landowners who have not received notice about this proceeding.
ATXI further objects to this request as requiring ATXI to conduct new studies that would be unduly burdensome to conduct. The request requires ATXI to develop specific study scenarios and perform extensive analysis to determine if this new hypothetical substation location and transmission line configuration could "provide an additional 138 kV source to the Decatur area by extending its 138 kV line from AIC's existing substation located on County Rd. 3000N west of Hwy 51".

Subject to and not withstanding these objections ATXI provides the following initial observations and concerns with the hypothetical substation location and system configuration as described in this DR ENG 11.03. These statements are based upon ATXI's understanding of the very limited information provided in this DR and ATXI's knowledge of the Ameren transmission system. They are not a complete or exhaustive list of problems or concerns that may be identified upon further analysis and therefore does not represent a commitment or agreement by ATXI that the described transmission reinforcements would be the final result of detailed analysis.

1. The DR's description of the hypothetical 138 kV system configuration is incomplete. It fails to identify where the "additional source to the Decatur area by extending its 138 kV line from AIC's existing substation, located on County Rd. 3000N west of Hwy 51" would terminate in the Decatur area. The termination location must be determined before any analysis can be performed.
   For the purposes of providing a response to this DR, we will assume the hypothetical new 138 kV line mentioned in this DR would terminate at the PPG substation and would be approximately 15 miles in length. This line length would be longer than the 138 kV connectors that would be constructed to connect to the Mt Zion substation location that was proposed in the Illinois River Project. The shorter connector length means that the Illinois Rivers Project provides a more reliable supply to the Decatur area.
2. The existing 3.35 mile long 138 kV tap to Moweaqua North substation would need to be rebuilt with a larger conductor and possibly larger and higher transmission towers.
   Also several additional 138 kV line connections would need to be made to the hypothetical new substation. The line lengths will depend upon the actual location of the substation described in DR ENG 11.02.
   a. A section of new 138 kV line would be needed to connect the new 345/138 kV sub to the tap to the existing Moweaqua North sub.
   b. A section of new 138 kV line would be needed to re-terminate the Pana 138 kV line at the new substation.
   c. A section of new 138 kV line would be needed to re-terminate the Decatur 138 kV line at the new substation.
3. ATXI does not believe the installation of the hypothetical 345/138 kV substation as described in ENG DR 11.02 combined with the hypothetical 138 kV line as described in ENG DR 11.03 would provide adequate voltage support to insure that post contingency voltages in the Decatur area would meet the 95% of nominal threshold used by Ameren Services for system planning to provide voltages to the customer consistent with the Standards of Service for

Electric Utilities contained in 86 Ill. Adm. Code Part 410. Transmission system voltage below 95% of nominal has been established as an indication of a possible deficiency The approved Illinois Rivers Project does provide adequate post contingency voltage support to exceed the 95% of nominal threshold.

ATXI does not believe the hypothetical system configuration would provide voltage support that will meet the future needs of the Decatur and Mt. Zion area. Therefore the hypothetical system configuration would not provide an adequate additional 138 kV source to the Decatur area.